

**REMARKS**

Claims 1-26 remain pending in the application. No claims have been amended.

Applicant respectfully requests favorable reconsideration in view of the following remarks.

**I. ALLOWABLE SUBJECT MATTER**

The Applicants thank the Examiner for the indication that Claim 19 would be allowable if rewritten in independent form to incorporate the elements of the base claims and any intervening claims. However, since the Applicant believes that the remaining claims in this application are patentable, the Applicants have not rewritten Claim 19 in independent form.

**II. 35 U.S.C. § 102 - ANTICIPATION**

Claims 1-5, 10, 11 and 20-24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Hirawa (U.S. Pat. No. 6,822,670). Applicant respectfully traverses this rejection.

A cited prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP § 2131; *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). Anticipation is only shown where each and every limitation of the claimed invention is found in a single cited prior art reference. MPEP § 2131; *In re Donohue*, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

With respect to independent Claim 1, Applicant respectfully submits that Hirawa does not teach (expressly or inherently) at least the following feature recited in Claim 1: a spatial

light modulator comprising both “*memory elements... and light modulation elements alterable in response to the data stored in respective ones of the memory elements.*”

Hirawa recites an image recording apparatus that includes an optical head 10 for emitting light representing an image onto a recording medium 9 and a signal processing part 22 for providing an image signal of the image to the optical head 10. (*Figure 1; Col. 4, Lines 11-17 and 37-44*). The optical head 10 is formed of a light source 11, a light modulator 12 consisting of a plurality of individually-controllable diffraction light modulation elements and a driving circuit 120 for driving each of the light modulation elements in the light modulator 12. (*Figure 2; Col. 4, Line 55 – Col. 6, Lines 1-9*). The driving circuit 120 is shown in Figure 5 and described throughout the specification as separate from the light modulator 12. In addition, in Figures 3, 4A and 4B, the light modulator 12 is shown and described as including only the diffraction light modulation elements, and not any part of the driving circuit 120.

There is no teaching or suggestion in Hirawa that the light modulator 12 itself includes memory elements associated with respective light modulation elements for storing data to control the respective light modulation elements, as is claimed in Claim 1. In contrast, Hirawa merely teaches the conventional external driving circuitry for driving the light modulator.

For example, Figure 11 of Hirawa shows a more detailed view of the signal processing part 22 and the driving circuit 120, together with the light modulator 12. The signal processing part 22 includes shift registers 431 and 432 for storing the pixel data representing the image to be transferred onto the recording medium 9. (*Figure 11; Col. 10, Lines 33-46*). The pixel data outputted from the shift registers 431 and 432 is used to drive a driving voltage control circuit 41 of the signal processing part 22. The driving voltage

control circuit 41, in turn, outputs the pixel data to the driving circuit 120 for input to the light modulator 12. (*Figure 11; Col. 10, Line 8 – Col. 11, Line 16; and Col. 12, Line 52- Col. 13, Line 6*).

Thus, the shift registers 431 and 432 and drive circuit 120 are all located external to the light modulator 12. There is no teaching or suggestion in Hirawa that the shift registers 431 or 432 or any part of the drive circuit 120 could be included in the light modulator 12 itself. Likewise, there is no teaching or suggestion in Hirawa of how the data would be loaded into the light modulator 12 if the shift registers 431 or 432 or any part of the drive circuit 120 were to be included in the light modulator 12.

With respect to independent Claim 22, Applicant respectfully submits that Hirawa does not teach (expressly or inherently) at least the following feature recited in Claim 22: after transferring an image onto a substrate in response to data loaded into memory elements associated with respective light modulation elements and then shifting the data between the memory elements, “*altering ones of the light modulation elements in response to the data shifted thereunto to transfer the image onto the substrate.*”

Referring again to Figure 11 of Hirawa, the pixel data in one of the shift registers 432 represents a first image at a first point in time, and the pixel data in the other shift register 431 represents a second image at a subsequent point in time. (*Figure 11; Col. 12, Lines 52-62*). Thus, although the pixel data is shifted from one shift register 431 to another shift register 432, in Hirawa, the same pixel data is not used for multiple image transfers. For example, in Hirawa, the pixel data used to transfer the first image is loaded into the light modulator 12 prior to image transfer, the loaded pixel data is discarded after image transfer, and entirely new pixel data used to transfer the second image is loaded into the light modulator 12 to transfer the second image. The second image is not loaded into the light modulator 12 by

shifting the pixel data representing the first image. Thus, for each image, the shift registers 431 and 432 in Hirawa store all of the pixel data for each light modulation element.

For at least these reasons, Hirawa fails to anticipate Applicants' invention as recited in independent Claims 1 and 22 (and their dependent claims). Accordingly, Applicant respectfully requests that the Examiner withdraw the § 102 rejection of Claims 1-5, 10, 11 and 20-24.

### **III. 35 U.S.C. § 103 - OBVIOUSNESS**

Claims 6-9 and 12-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirawa in view of Morokawa et al. (U.S. Patent No. 4,302,829). Claims 18, 25 and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirawa and Morokawa et al and further in view of Matsui (U.S. Patent No. 6,320,635). Applicant respectfully traverses these rejections.

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP § 2142.

As described above, Hirawa fails to disclose, teach, or suggest a spatial light modulator comprising both “*memory elements... and light modulation elements alterable in response to the data stored in respective ones of the memory elements,*” as recited in Claim 1. In addition, Hirawa fails to disclose teach or suggest “*altering ones of the light modulation elements in response to the data shifted thereunto to transfer the image onto the substrate,*” as recited in Claim 22. Morokawa et al. and Matsui were not cited by the Examiner as teaching either of these features, and Applicant can find no mention or suggestion of either of these features in either Morokawa et al. or Matsui. Hence, the Examiner has failed to make a *prima facie* case of obviousness. For at least these reasons, Applicants respectfully submit that Claims 6-9, 12-18, 25 and 26 are not obvious over the prior art of record. Accordingly, Applicants respectfully request that the Examiner withdraw the § 103 rejection of Claims 6-9, 12-18, 25 and 26.

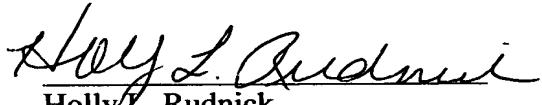
**CONCLUSION**

Thus, all grounds of rejection and/or objection are traversed or accommodated, and favorable reconsideration and allowance are respectfully requested. Should the Examiner have any further questions or comments facilitating allowance, the Examiner is invited to contact Applicant's representative indicated below to further prosecution of this application to allowance and issuance.

Respectfully submitted,

GARLICK, HARRISON & MARKISON, LLP.

Dated: 5/3/2005

  
Holly L. Rudnick  
Registration No. 43,065

P.O. Box 670007  
Dallas, Texas 75367  
(Direct) (214) 387-8097  
(Fax) (214) 387-7949  
(Email) [hrudnick@texaspatents.com](mailto:hrudnick@texaspatents.com)